

Alba 3000 'Transistagram'

1911

Battery operated portable radiogram

Introduction

Transistagram, Model 3000, is a seven transistor battery operated portable radiogram incorporating a two-speed record player and an internal ferrite rod aerial assembly.

Two wavebands are covered, namely m.w. 178-580m and l.w. 820-2,050m, and the i.f. is 470kc/s.

A 4in 8Ω loudspeaker is fitted which produces a maximum audio output of 600mW, current consumption when fully driven being 140mA.

Power supply required is six type LPU2 cells or their equivalent.

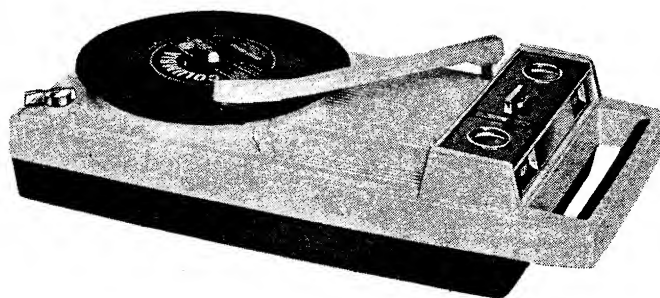
(Continued overleaf Col 1).

Transistor table

Transistor	Emitter (V)	Base (V)	Collector (V)
TR1 2SA202C	1.65	1.7	8.4
TR2 2SA202	0.45	0.55	8.5
TR3 2SA202	0.65	0.75	8.5
TR4 2SB186	0.8	0.85	6.8
TR5 2SB186	2.0	2.1	7.7
TR6 2SB22	4.45	4.55	9.0
TR7 2SB22	0.02	0.2	4.4

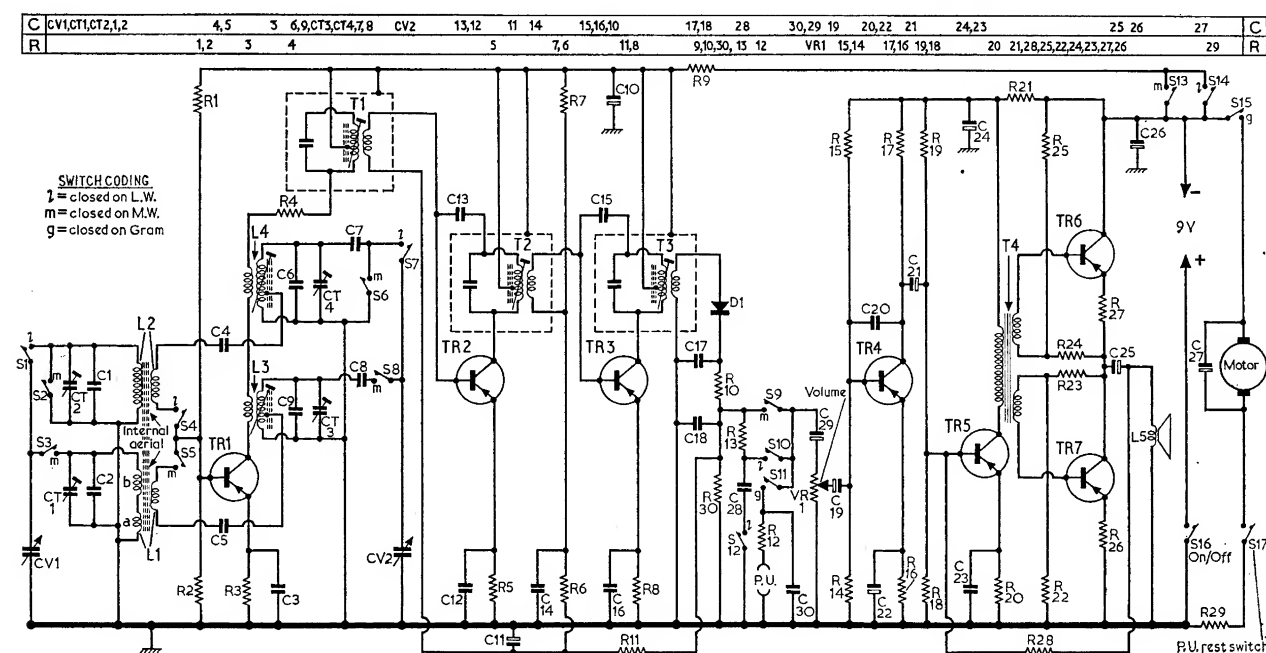
Quiescent current radio only 11mA
Motor current 30-45mA

Appearance of Alba model 3000 'Transistagram' with top cover removed.



Resistors				Capacitors			
R1	27kΩ	A1	R22	120Ω	B1	C12	0.02μF
R2	6.8kΩ	B1	R23	2.7kΩ	B1	C13	12pF
R3	3.9kΩ	B1	R24	120Ω	C1	C14	0.02μF
R4	56Ω	B2	R25	2.7kΩ	C1	C15	10pF
R5	1.5kΩ	B1	R26	3.3kΩ	B1	C16	0.02μF
R6	3.3kΩ	B1	R27	3.3kΩ	C1	C17	0.01μF
R7	100kΩ	B1	R28	33kΩ	B2	C18	0.01μF
R8	1kΩ	B1	R29	10Ω	—	C19	5μF
R9	270Ω	B2	R30	47kΩ	C1	C20	1,000pF
R10	3.9kΩ	C1	VR1	50kΩ	—	C21	10μF
R11	2.7kΩ	B1	Coils and transformers				
R12	330kΩ	B1	C1	30pF	A2	C22	30μF
R13	8.2kΩ	—	C2	10pF	A1	C23	30μF
R14	22kΩ	B2	C3	0.01μF	B1	C24	120μF
R15	150kΩ	B2	C4	2,200pF	A2	C25	120μF
R16	2.2kΩ	B2	C5	3,300pF	A1	C26	200μF
R17	3.3kΩ	B2	C6	100pF	A1	C27	120μF
R18	12kΩ	B2	C7	180pF	A2	C28	0.04μF
R19	22kΩ	B2	C8	390pF	A1	C29	30μF
R20	470Ω	B2	C9	18pF	A1	C30	480pF
R21	200Ω	C2	C10	50μF	B1	CV1	—
			C11	30μF	B1	CV2	—
					CT1	—	A1
					CT2	—	A2
					CT3	—	A1
					CT4	—	A2
					L1a/b	—	A2
					L2	—	C2
					L3	—	A1
					L4	—	A2
					L5	8Ω	*
					T1	—	B1
					T2	—	B1
					T3	—	B1
					T4	—	C1
					Miscellaneous		
					D1	1S188	C2
					S1-S15	—	—
					S16	—	—
					S17	—	—

* Loudspeaker.



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Transistor analysis

Transistor voltages quoted in the table overleaf were obtained from information supplied by the manufacturers.

They are all negative with respect to the positive line and were measured, under quiescent conditions, with a model 8 Avometer.

Circuit alignment

Equipment required.—An r.f. signal generator amplitude modulated 30 per cent at 400c/s and an r.f. coupling loop.

Preset volume control to maximum and loosely couple the signal generator with the r.f. coupling loop to the ferrite rod aerial assembly. All i.f. and r.f. signals are fed in via this source. As the receiver sensitivity increases attenuate input signal so that the receiver a.g.c. does not become operative, thereby avoiding alignment error.

1. — Switch receiver to m.w., tune to 550m and feed in a 470kc/s a.m. signal. Adjust **T3**, **T2** and **T1** in that order for maximum output. Repeat in the same order for optimum results.

2. — Switch receiver to l.w., tune to 2,000m and feed in a 150kc/s a.m. signal. Adjust **L4** and the position of **L2** on ferrite rod for maximum output.

3. — Tune receiver to 1,000m and feed in a 300kc/s a.m. signal. Adjust **CT4** and **CT2** for maximum output.

4. — Repeat operations 2 and 3 for optimum results.

5. — Switch receiver to m.w., tune to 500m and feed in a 600kc/s a.m. signal. Adjust **L3** and the position of **L1a** on ferrite rod for maximum output.

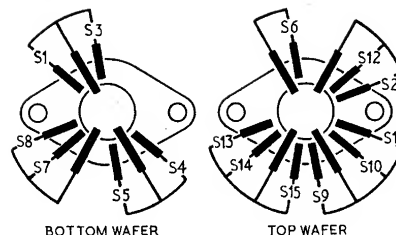
6. — Tune receiver to 200m and feed in a 1,500kc/s a.m. signal. Adjust **CT3** and **CT1** for maximum output.

7. — Repeat operations 5 and 6 for optimum results.

Sensitivity

I.f. sensitivity for a 50mW output. — Switch receiver to m.w. and tune to 550m. Feed in a 470kc/s a.m. signal via a 1,000pF capacitor to the following stages: **TR1** base 14µV; **TR2** base 90µV; **TR3** base 2.3mV; **D1** anode 23mV. Change input signal to 1Mc/s a.m. and feed in via a 1,000pF capacitor to **TR1** base 2µV.

For a 50mW audio output when switched to gram. Disconnect the p.u. and feed in across **VR1** a 1kc/s signal at 75mV via an 820pF capacitor.



Dismantling

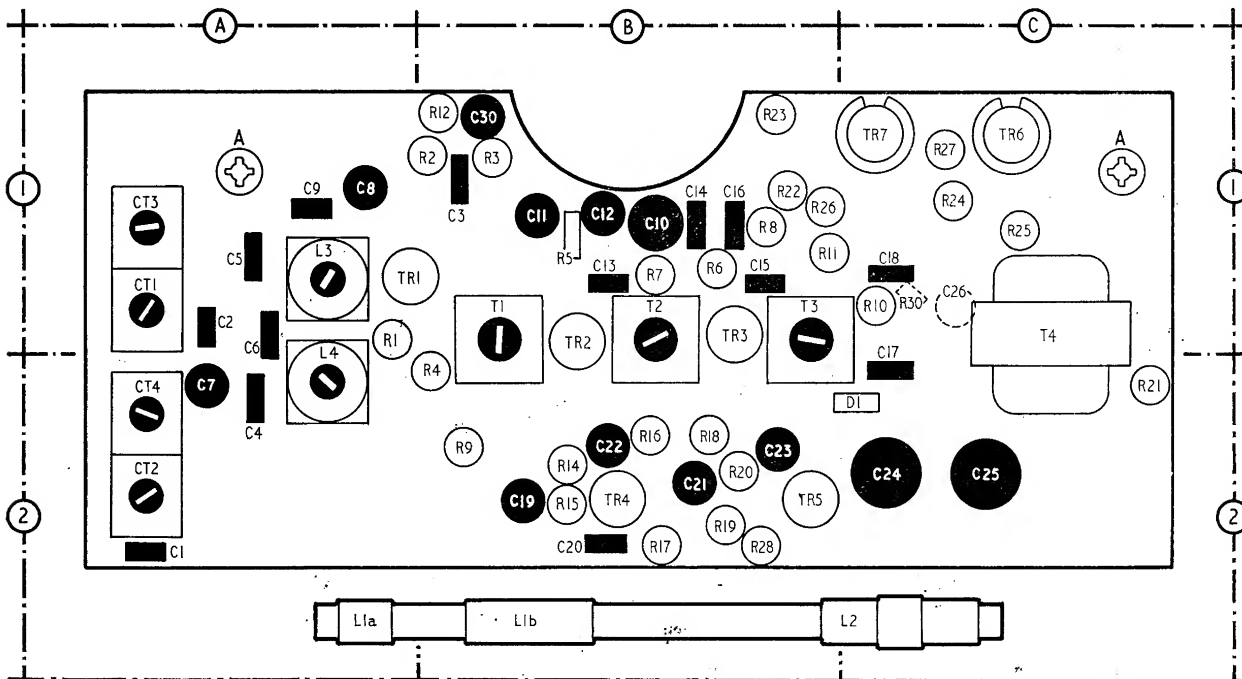
To gain access to chassis for servicing, first remove wavechange knob (pull off). Unscrew and remove two PK screws in side opposite to handle and two machine screws located in recesses in the bottom. The bottom of the case may now be lifted off.

The chassis may be removed from the case after two screws (A on component location illustration) on printed panel and four PK screws securing control plate have been unscrewed and removed. The chassis may now be lifted out to the extent of the connecting leads.

Manufacturer's service department

Alba (Radio and Television) Ltd.,
52-70 Tabernacle Street,
London, E.C.2.

(Telephone: CLerkenwell 1322)



Component locations as viewed from component side of printed panel.